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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,372	11/14/2005	Klaus Schneider	10191/3979	3386

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KENYON & KENYON LLP
ONE BROADWAY
NEW YORK, NY 10004

EXAMINER
BAUM, RONALD

ART UNIT	PAPER NUMBER
2136	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>22 January 2007</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 9-12* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 9-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>09 May 2005</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This action is in reply to applicant's correspondence of 22 January 2007.

2.   Claims 1, 9-12 are pending for examination.

3.   Claims 1, 9-12 are rejected.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on
> sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 9-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Fruehling et

al, U.S. Patent 6,625,688 B1.

4.   As per claim 1; "A method for controlling a microcontroller in a control unit in a motor

vehicle having a processor core containing at least one read-only memory area, and at least one

rewritable memory area, at least one control program that is intended to be processed by the

processor core being stored in the rewritable memory area, the method comprising:

storing a verification program in

·   a write-once memory area of the rewritable memory area;

storing a service program in

the read-only memory area;

calling the service program by

the control program

at regular intervals;

calling the verification program by

the service program;

resetting a counter by

the service program when called by

the control program;

verifying at least part of the rewritable memory area by

the verification program;

triggering a reset one of

by the verification program in the event of

manipulation of the verified memory area and

by the counter in the event of

counter overflow [*ABSTRACT, figures 1-8c and associated descriptions,*

and more particularly, figures 2,5,6a-6e, whereas the determination of the health

of a microcontroller used for automotive applications/environments via the use of

reference signatures created (and stored as intermediate data structures),

processed, and cross-referenced via the single/dual processing elements (i.e.,

such as the case of the 2nd processor in the dual processor case clearly

encompasses a verification program store (write-once memory, EEPROM, etc.,)

such that the signature are representative of associated memory (i.e., ROM,

volatile/non-volatile, etc.,) configurations, clearly encompasses the claimed

limitations as broadly interpreted by the examiner.].".

5.   Claim 9 ***additionally recites*** the limitation that; "The method of claim 1, wherein the

triggering the reset includes

        triggering a reset of the microcontroller.".

The teachings of Fruehling et al are directed towards such limitations (i.e., ABSTRACT, figures

1-8c and associated descriptions, and more particularly, figure 4, whereas the determination of

the health of a microcontroller used for automotive applications/environments via the use of

reference signatures created, processed, and cross-referenced via the processing elements is such

that determination of fault conditions/state changes, to that effect, result in initializing state

changes (i.e., reset the processing element(s)), clearly encompassing the claimed limitations as

broadly interpreted by the examiner.).

6.   Claim 10 ***additionally recites*** the limitation that; "The method of claim 1, wherein the

triggering the reset includes at least one of

        shutting down the control unit, and

        operating the control unit in

            a limited operation mode.".

The teachings of Fruehling et al are directed towards such limitations (i.e., ABSTRACT, figures

1-8c and associated descriptions, and more particularly, figure 4, whereas the determination of

the health of a microcontroller used for automotive applications/environments via the use of

reference signatures created, processed, and cross-referenced via the processing elements is such that determination of fault conditions/state changes, to that effect, result in initializing state changes (i.e., reset the processing element(s), effectively shutting down the control unit, or in the case of stalling the processor, operating in a 'limited operation mode'), clearly encompassing the claimed limitations as broadly interpreted by the examiner.).

7.   Claim 11 *additionally recites* the limitation that; "The method of claim 1, wherein the triggering the reset includes at least one of

sending a signal to other control units, and

sending a warning signal which triggers a request for the vehicle to be repaired.".

The teachings of Fruehling et al are directed towards such limitations (i.e., ABSTRACT, figures 1-8c and associated descriptions, and more particularly, figures 4, 8, whereas the determination of the health of a microcontroller used for automotive applications/environments via the use of reference signatures created, processed, and cross-referenced via the processing elements is such that determination of fault conditions/state changes, to that effect, result in initializing state changes (i.e., reset the processing element(s), etc., and in the case of 'step 336', a signature error result driving a peripheral output or used for subsequent communications purposes (col. 17, lines 36-57)), clearly encompassing the claimed limitations as broadly interpreted by the examiner.).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
such that the subject matter as a whole would have been obvious at the time the invention was made to a person
having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
manner in which the invention was made.

8.   Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fruehling et al,

U.S. Patent 6,625,688 B1, as applied to claim 1 above, and further in view of Chetty, U.S. Patent

Appl. Publication US 2002/0052193 A1.

        Claim 12 *additionally recites* the limitation that; "The method of claim 1, wherein the

write-once memory area includes

        a password-protected memory area of the rewritable memory area.".

        The teachings of Fruehling et al suggest the base claims limitations (see "As per claim

1..." paragraph above) *without explicitly teaching* of the use of "...a password-protected

memory ... rewritable memory area", as a form of memory protection security for a

processor/controller functionality per se.

        Chetty, teaches (i.e., para. 0032, 0049-0052, et seq.) of utilizing various

authentication/authorization aspects (i.e., passwords, token based, certificates, etc.,) to secure

access to a controllers protected memory (i.e., 'write-once memory', EEPROM, Flash, etc.,) in a

mobile device susceptible to compromise because of the non-stationary aspect of the controller.

The Chetty invention also clearly encompasses the storage of parameters (i.e.,

automotive/vehicle operational parameters) securely; clearly security aspects associated with the

applicants claimed invention.

Thus, it would have been obvious to a person of ordinary skill in the art at the

time of the invention to have been motivated to combine the microcontroller memory

checking/integrity verification, with the Chetty teachings of specific protection mechanism (i.e.,

passwords), in order to provide a secure quality to the Fruehling et al mobile device memory

access. Such motivation to combine would clearly encompass the need to allow less

susceptibility to compromise important stored parameters used for the application firmware.

Response to Amendment

9.   As per applicant's argument concerning the lack of teaching by Fruehling et al of a write-

once memory element of a rewritable memory structure utilized for the verification aspects of the

claim limitations, the examiner has fully considered in this response to amendment; the

arguments, and finds them not to be persuasive.

At the very least, the EEPROM (or flash for that matter) is a memory that upon written to

in a programming state is a 'write-once' structure until erased/reprogrammed in a systematic

manner, clearly encompassing the 'write-once' as part of a 'rewritable memory' aspects of the

claim, as *broadly interpreted by the examiner*, as per the claim language, and would therefore be

applicable in the rejection, such that the rejection support references collectively encompass the

said claim limitations in their entirety.

10.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing
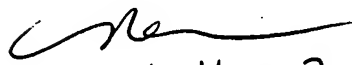
date of this final action.

Conclusion

11.   Any inquiry concerning this communication or earlier communications from examiner

should be directed to Ronald Baum, whose telephone number is (571) 272-3861, and whose

unofficial Fax number is (571) 273-3861 and unofficial email is Ronald.baum@uspto.gov. The

examiner can normally be reached Monday through Thursday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Nasser Moazzami, can be reached at (571) 272-4195. The Fax number for the

organization where this application is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. For more information for

unpublished applications is available through Private PAIR only. For more information about the

PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private

PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NASSER MOAZZAMI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Ronald Baum

Patent Examiner